

RN02005

Serial number: 10/502,178

AMENDMENT

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-19. (Cancelled)

20. (Currently amended) A reactor for treating a viscous medium or for carrying out chemical reactions in viscous medium, said reactor comprising a vessel and a coil for circulation of a coolant fluid, said coil comprising at least one segment of tube wound along a helical generatrix, and at least a second segment of tube (512, 513) wound along a helical generatrix and extending in parallel to the first segment (511) between a distributor (53) and a manifold (54) said distributor (53) and/or said manifold (54) being curved with a radius (R₃, R₄) substantially equal to the radius (R₂) of said first bundle (51) or optionally of said second bundle (52), with the result that they are substantially in line with said first bundle or optionally with said second bundle, said first and second segments being centred on the same geometrical axis (X₅), with substantially the same bending radius (R₁) and nested so that they together form a substantially cylindrical bundle (51).

21. (Previously presented) The reactor according to Claim 20, wherein the coil further comprises a second bundle (52) formed by at least one segment of tube (521, 522) wound along a helical generatrix, extending between said distributor (53) and said manifold (54) and centred on said axis (X₅), said second bundle being of substantially cylindrical shape, with a radius (R₂) smaller than the radius (R₁) of the first bundle (51).

22. (Previously presented) The reactor according to Claim 21, wherein said second bundle (52) is formed by at least two segments of tubes (521, 522) wound along helical generatrices, nested and extending in parallel between said distributor (53) and said manifold (54).

RN02005

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AMENDMENT

23. (Previously presented) The reactor according to Claim 20, wherein said first bundle (51) is formed by three segments of tube (511, 512, 513) wound along helical generatrices and nested.

24. (Previously presented) The reactor according to Claim 20, wherein said segments (511, 512, 513, 521, 522) have substantially the same length and/or induce substantially the same pressure drop on the flow of said coolant fluid, between said distributor (53) and said manifold (54).

25. (Currently amended) The reactor according to Claim 21 20, wherein the coil further comprises a tube (56) extending, in a direction substantially parallel to said axis (X_5), between said first (51) and second (52) bundles, said tube being connected either to said distributor (53) or to said manifold (54).

26. (Previously presented) The reactor according to Claim 25, wherein said distributor (53) and/or said manifold (54) are in the form of a torus and centred on said axis (X_5).

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Previously presented) A reactor according to Claim 20, further comprising an agitator (4) arranged around or inside said coil (5).

31. (Currently amended) A reactor according to Claim 30, wherein said agitator is suspended from ~~a~~ the ceiling of said reactor (1) and forms a cage surrounding said coil (5), the supply and evacuation (56, 59, 61, 62) of the coolant fluid towards or from said coil being effected through the bottom (21) of said reactor.

32. (Cancelled)

33. (Previously presented) A reactor according to Claim 30, wherein the inner bundle (52) or the single bundle (51) of said coil forms a central well (P) of radius (R_2) included between 20 and 70% of the radius (R) of said vessel (2).

34. (Currently amended) A reactor according to Claim 30 33, wherein the inner bundle (52) of said coil forms a central well (P) of radius (R_2) included between 20 and 40% of said radius.

RN02005

Serial number: 10/502,178

AMENDMENT

35. (Previously presented) A process for the treatment of a viscous medium comprising the step of treating said liquid in a reactor (1) as defined in Claim 20 and of volume (V) greater than about 8 m³.

36. (Previously presented) The process according to Claim 35, wherein said treatment is a reaction of polymerization.

37. (Previously presented) The process according to Claim 36, wherein the reaction is a discontinuous reaction of polymerization.

38. (Previously presented) The process according to Claim 38, wherein the reaction is a continuous reaction of polymerization.